

Ivy Global

ISEE

UPPER LEVEL TEST 1

PDF Version 1.3

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ISEE UPPER LEVEL TEST 1

MARKING INSTRUCTIONS

- Use a #2 or HB pencil only on pages 2 and 3.
- Use a ballpoint pen for your essay on pages 6 and 7.
- Make dark marks that completely fill the circle.
- Erase clearly any mark you wish to change.
- Make no stray marks on this form.
- Do not fold or crease this form.

Correct Mark Incorrect Marks

1 VERBAL REASONING

1	A B C D	15	A B C D	29	A B C D
2	A B C D	16	A B C D	30	A B C D
3	A B C D	17	A B C D	31	A B C D
4	A B C D	18	A B C D	32	A B C D
5	A B C D	19	A B C D	33	A B C D
6	A B C D	20	A B C D	34	A B C D
7	A B C D	21	A B C D	35	A B C D
8	A B C D	22	A B C D	36	A B C D
9	A B C D	23	A B C D	37	A B C D
10	A B C D	24	A B C D	38	A B C D
11	A B C D	25	A B C D	39	A B C D
12	A B C D	26	A B C D	40	A B C D
13	A B C D	27	A B C D		
14	A B C D	28	A B C D		

2 QUANTITATIVE REASONING

- | | | |
|--------------------|--------------------|--------------------|
| 1 (A) (B) (C) (D) | 15 (A) (B) (C) (D) | 29 (A) (B) (C) (D) |
| 2 (A) (B) (C) (D) | 16 (A) (B) (C) (D) | 30 (A) (B) (C) (D) |
| 3 (A) (B) (C) (D) | 17 (A) (B) (C) (D) | 31 (A) (B) (C) (D) |
| 4 (A) (B) (C) (D) | 18 (A) (B) (C) (D) | 32 (A) (B) (C) (D) |
| 5 (A) (B) (C) (D) | 19 (A) (B) (C) (D) | 33 (A) (B) (C) (D) |
| 6 (A) (B) (C) (D) | 20 (A) (B) (C) (D) | 34 (A) (B) (C) (D) |
| 7 (A) (B) (C) (D) | 21 (A) (B) (C) (D) | 35 (A) (B) (C) (D) |
| 8 (A) (B) (C) (D) | 22 (A) (B) (C) (D) | 36 (A) (B) (C) (D) |
| 9 (A) (B) (C) (D) | 23 (A) (B) (C) (D) | 37 (A) (B) (C) (D) |
| 10 (A) (B) (C) (D) | 24 (A) (B) (C) (D) | 38 (A) (B) (C) (D) |
| 11 (A) (B) (C) (D) | 25 (A) (B) (C) (D) | |
| 12 (A) (B) (C) (D) | 26 (A) (B) (C) (D) | |
| 13 (A) (B) (C) (D) | 27 (A) (B) (C) (D) | |
| 14 (A) (B) (C) (D) | 28 (A) (B) (C) (D) | |

3 READING COMPREHENSION

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|--------------------|--------------------|--------------------|
| 1 (A) (B) (C) (D) | 15 (A) (B) (C) (D) | 29 (A) (B) (C) (D) |
| 2 (A) (B) (C) (D) | 16 (A) (B) (C) (D) | 30 (A) (B) (C) (D) |
| 3 (A) (B) (C) (D) | 17 (A) (B) (C) (D) | 31 (A) (B) (C) (D) |
| 4 (A) (B) (C) (D) | 18 (A) (B) (C) (D) | 32 (A) (B) (C) (D) |
| 5 (A) (B) (C) (D) | 19 (A) (B) (C) (D) | 33 (A) (B) (C) (D) |
| 6 (A) (B) (C) (D) | 20 (A) (B) (C) (D) | 34 (A) (B) (C) (D) |
| 7 (A) (B) (C) (D) | 21 (A) (B) (C) (D) | 35 (A) (B) (C) (D) |
| 8 (A) (B) (C) (D) | 22 (A) (B) (C) (D) | 36 (A) (B) (C) (D) |
| 9 (A) (B) (C) (D) | 23 (A) (B) (C) (D) | |
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| 14 (A) (B) (C) (D) | 28 (A) (B) (C) (D) | |

4 MATHEMATICS ACHIEVEMENT

- | | | |
|--------------------|--------------------|--------------------|
| 1 (A) (B) (C) (D) | 18 (A) (B) (C) (D) | 35 (A) (B) (C) (D) |
| 2 (A) (B) (C) (D) | 19 (A) (B) (C) (D) | 36 (A) (B) (C) (D) |
| 3 (A) (B) (C) (D) | 20 (A) (B) (C) (D) | 37 (A) (B) (C) (D) |
| 4 (A) (B) (C) (D) | 21 (A) (B) (C) (D) | 38 (A) (B) (C) (D) |
| 5 (A) (B) (C) (D) | 22 (A) (B) (C) (D) | 39 (A) (B) (C) (D) |
| 6 (A) (B) (C) (D) | 23 (A) (B) (C) (D) | 40 (A) (B) (C) (D) |
| 7 (A) (B) (C) (D) | 24 (A) (B) (C) (D) | 41 (A) (B) (C) (D) |
| 8 (A) (B) (C) (D) | 25 (A) (B) (C) (D) | 42 (A) (B) (C) (D) |
| 9 (A) (B) (C) (D) | 26 (A) (B) (C) (D) | 43 (A) (B) (C) (D) |
| 10 (A) (B) (C) (D) | 27 (A) (B) (C) (D) | 44 (A) (B) (C) (D) |
| 11 (A) (B) (C) (D) | 28 (A) (B) (C) (D) | 45 (A) (B) (C) (D) |
| 12 (A) (B) (C) (D) | 29 (A) (B) (C) (D) | 46 (A) (B) (C) (D) |
| 13 (A) (B) (C) (D) | 30 (A) (B) (C) (D) | 47 (A) (B) (C) (D) |
| 14 (A) (B) (C) (D) | 31 (A) (B) (C) (D) | |
| 15 (A) (B) (C) (D) | 32 (A) (B) (C) (D) | |
| 16 (A) (B) (C) (D) | 33 (A) (B) (C) (D) | |
| 17 (A) (B) (C) (D) | 34 (A) (B) (C) (D) | |

Essay Topic Sheet

The directions for the Essay portion of the ISEE are printed in the box below. Use the pre-lined pages on pages 6-7 for this part of the Practice Test.

You will have 30 minutes to plan and write an essay on the topic printed on the other side of this page. **Do not write on another topic. An essay on another topic is not acceptable.**

The essay is designed to give you an opportunity to show how well you can write. You should try to express your thoughts clearly. How well you write is much more important than how much you write, but you need to say enough for a reader to understand what you mean.

You will probably want to write more than a short paragraph. You should also be aware that a copy of your essay will be sent to each school that will be receiving your test results. You are to write only in the appropriate section of the answer sheet. Please write or print so that your writing may be read by someone who is not familiar with your handwriting.

You may make notes and plan your essay on the reverse side of the page. Allow enough time to copy the final form onto your answer sheet. You must copy the essay topic onto your answer sheet, on page 3, in the box provided.

Please remember to write only the final draft of the essay on pages 6-7 of your answer sheet and to write it in blue or black pen. Again, you may use cursive writing or you may print. Only pages 6-7 will be sent to the schools.

Directions continue on the next page.

REMINDER: Please write this essay topic on the first few lines of page 6 of your answer sheet.

Essay Topic

There are many challenges facing young people today. Name one such challenge, and explain what you think is the best way of dealing with this challenge.

- Only write on this essay question
- Only pages 3 and 4 will be sent to the schools
- Only write in blue or black pen

NOTES

A large rectangular area containing 25 horizontal lines, intended for writing or drawing.

Section 1

Verbal Reasoning

40 Questions

Time: 20 minutes

This section is divided into two parts that contain two different types of questions. As soon as you have completed Part One, answer the questions in Part Two. You may write in your test booklet. For each answer you select, fill in the corresponding circle on your answer document.

PART ONE — SYNONYMS

Each question in Part One consists of a word in capital letters followed by four answer choices. Select the one word that is most nearly the same in meaning as the word in capital letters.

SAMPLE QUESTION:

Sample Answer

CHARGE:

(A) (B) (C) (D)

(A) release

(B) belittle

(C) accuse

(D) conspire

PART TWO — SENTENCE COMPLETION

Each question in Part Two is made up of a sentence with one or two blanks. One blank indicates that one word is missing. Two blanks indicate that two words are missing. Each sentence is followed by four answer choices. Select the one word or pair of words that best completes the meaning of the sentence as a whole.

SAMPLE QUESTIONS:

Sample Answer

It rained so much that the streets were _____.

 (A) (B) (C) (D)

(A) flooded

(B) arid

(C) paved

(D) crowded

The house was so _____ that it took two days to _____ it.

(A) (B) (C) (D)

(A) old ... borrow

(B) pretty ... ensnare

(C) small ... explore

(D) dirty ... clean

STOP. Do not go on
until told to do so.



PART ONE – SYNONYMS

Directions: Select the word that is most nearly the same in meaning as the word in capital letters.

- | | |
|--|--|
| <p>1. CAST
(A) announce
(B) assemble
(C) pour
(D) throw</p> <p>2. FROCK
(A) slipper
(B) table
(C) coin
(D) dress</p> <p>3. SOLID
(A) pouty
(B) firm
(C) massive
(D) sticky</p> <p>4. NULLIFY
(A) engage
(B) dispute
(C) melt
(D) cancel</p> <p>5. BEDEVIL
(A) torment
(B) enchant
(C) bore
(D) scorn</p> | <p>6. CORRELATION
(A) integration
(B) association
(C) disturbance
(D) correction</p> <p>7. LEACH
(A) bug
(B) bog
(C) drain
(D) infect</p> <p>8. CASTIGATE
(A) berate
(B) muddle
(C) remove
(D) perfume</p> <p>9. EVOKE
(A) antagonize
(B) elicit
(C) scourge
(D) burn</p> <p>10. CONSTRUE
(A) misrepresent
(B) interpret
(C) flail
(D) propagate</p> |
|--|--|

Go on to the next page ➡

11. PALATABLE

- (A) invigorating
- (B) acceptable
- (C) consumptive
- (D) stacked

12. SHIRK

- (A) avoid
- (B) enable
- (C) stab
- (D) don

13. SCOUR

- (A) scrutinize
- (B) leer
- (C) absorb
- (D) grimace

14. BARBED

- (A) buried
- (B) collected
- (C) slight
- (D) spiked

15. SALUTATION

- (A) speech
- (B) persuasion
- (C) penalty
- (D) greeting

16. RIGOROUS

- (A) abundant
- (B) insignificant
- (C) thorough
- (D) passing

17. DERELICT

- (A) neglected
- (B) vacuous
- (C) temporary
- (D) unlawful

18. FLINCH

- (A) leap
- (B) roar
- (C) dodge
- (D) wince

19. REFUGE

- (A) confinement
- (B) disposal
- (C) deferment
- (D) sanctuary

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PART TWO – SENTENCE COMPLETION

Directions: Select the word that best completes the sentence.

20. Viewers were unsurprised when the notoriously _____ host began to attack his guest's political views.
- (A) popular
(B) understanding
(C) confrontational
(D) discerning
21. Unlike many of his peers who wrote in only one genre, Thomas Middleton was well known for being a _____ playwright who wrote tragedies, histories and comedies.
- (A) versatile
(B) steady
(C) frequent
(D) focused
22. The Student Activities Board considered taking a senior trip to France, but determined that it was too _____ for their limited budget.
- (A) prudent
(B) frugal
(C) curmudgeonly
(D) extravagant
23. Although the mayor was well liked by most of the town's residents, his _____ approach to crime prompted calls for tougher enforcement from some members of the community.
- (A) rigid
(B) successful
(C) lax
(D) proven
24. Even after the documentary "Nanook of the North" was revealed to have been heavily staged, some supporters continued to argue that the film's portrayal of the Inuit people was very _____.
- (A) authentic
(B) insulting
(C) confusing
(D) prejudiced
25. The _____ damage caused by major earthquakes sometimes takes decades to repair.
- (A) irreversible
(B) severe
(C) minimal
(D) provisional

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26. After failing an important biology test, Arthur worked to become a more _____ student by studying more frequently and more carefully.
- (A) unscrupulous
(B) conscientious
(C) gracious
(D) baleful
27. There was a fiercely _____ atmosphere in the sales office, where employees vied with one another over a limited number of bonuses awarded to top sellers.
- (A) competitive
(B) depressing
(C) expensive
(D) astonishing
28. When threatened, skunks release a _____ odor powerful enough to ward off potential predators.
- (A) voracious
(B) classic
(C) residual
(D) pungent
29. With his _____ eye for detail, the appraiser was easily able to spot that the piece was a fraud and not a real Picasso.
- (A) inattentive
(B) discerning
(C) superficial
(D) neglectful
30. Thomas Henry Huxley was known as “Darwin’s Bulldog” for his vigorous defense of evolutionary theory against the arguments of its _____.
- (A) founder
(B) detractors
(C) believers
(D) researchers
31. Although it can look rather silly, biting a pencil has been known to _____ headaches by relaxing the jaw and _____ tension.
- (A) eliminate ... augmenting
(B) agitate ... decreasing
(C) mitigate ... exacerbating
(D) ease ... diminishing
32. When the city decided to expand the subway system in order to _____ more passengers, workers were hired to _____ underground tunnels.
- (A) document ... legislate
(B) coerce ... decode
(C) apply ... wane
(D) accommodate ... excavate
33. Despite her _____ tastes, Catherine was mindful of the future and never allowed _____ spending to endanger her financial security.
- (A) aristocratic ... pious
(B) pragmatic negligent
(C) lavish ... excessive
(D) impoverished ... tenacious

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34. Moved by the _____ of the poor, Edward Helms founded Goodwill, a _____ organization that provides job training, employment placement services, and other community-based programs for people in need.
- (A) appearance ... fashion
(B) dignity ... deplorable
(C) troubles ... merciless
(D) plight ... philanthropic
35. George Washington set the informal _____ that presidents should serve only two terms, but presidential term limits were not formally _____ until 1951.
- (A) precedent ... ratified
(B) tradition ... abolished
(C) suggestion ... condemned
(D) transgression ... approved
36. After diving very deep underwater, divers must be careful to slowly _____ themselves to decreasing pressure during their _____ from the depths.
- (A) sublimate ... rush
(B) acclimate ... ascent
(C) rehabilitate ... accord
(D) advocate release
37. Jack Johnson was a _____ figure in boxing, whose _____ status as the first African American world heavyweight champion won him numerous advertising and endorsement deals.
- (A) prominent celebrity
(B) beloved gentle
(C) neglected ... infamous
(D) minor ... recognizable
38. Maya was so prone to making _____ remarks that when she gave compliments even her friends were _____ of their sincerity.
- (A) colloquial ... convinced
(B) mocking... sure
(C) sarcastic ... skeptical
(D) candid ... dubious
39. An old clock must be handled carefully, for it contains many _____ mechanisms which are _____ to its correct operation.
- (A) sturdy fundamental
(B) rusty ... peripheral
(C) delicate ... essential
(D) irreverent ... vital
40. From the delicious scent that was _____ in through the window, Mr. Snell was able to _____ that his neighbor was once again baking her famous pies.
- (A) blowing ... implicate
(B) wafting ... deduce
(C) sneaking ... decide
(D) leaking ... argue

STOP. Do not go on
until told to do so.



Section 2

Quantitative Reasoning

37 Questions

Time: 35 minutes

This section is divided into two parts that contain two different types of questions. As soon as you have completed Part One, answer the questions in Part Two. You may write in your test booklet. For each answer you select, remember to fill in the corresponding circle on your answer document.

Any figures that accompany the questions in this section may be assumed to be drawn as accurately as possible EXCEPT when it is stated that a particular figure is not drawn to scale. Letters such as x , y , and n stand for real numbers.

PART ONE — WORD PROBLEMS

Each question in Part One consists of a word problem followed by four answer choices. You may write in your test booklet; however, you may be able to solve many of these problems in your head. Next, look at the four answer choices given and select the best answer.

EXAMPLE 1:

What is the value of the expression $3 + 7 \times (6 - 4)^2 - 8 \div 2$?

- (A) 14
- (B) 16
- (C) 27
- (D) 32

Sample Answer

Ⓐ Ⓑ ● Ⓓ

The correct answer is 27, so circle C is darkened.

STOP. Do not go on
until told to do so.



PART TWO — QUANTITATIVE COMPARISONS

All questions in Part Two are quantitative comparisons between the quantities shown in Column A and Column B. Using the information given in each question, compare the quantity in Column A to the quantity in Column B, and choose one of these four answer choices:

- (A) The quantity in Column A is greater.
- (B) The quantity in Column B is greater.
- (C) The two quantities are equal.
- (D) The relationship cannot be determined from the information given.

EXAMPLE 2:	<u>Column A</u> 5	<u>Column B</u> $\sqrt{25}$	<u>Sample Answer</u> Ⓐ Ⓑ ● Ⓓ
The quantity in <u>Column A</u> (5) is the same as the quantity in <u>Column B</u> (5), so circle C is darkened.			
<hr/>			
EXAMPLE 3:	<u>Column A</u> $x = 6^2 - 3 \times 4$ x	<u>Column B</u> 22	<u>Sample Answer</u> ● Ⓑ Ⓒ Ⓓ
The quantity in <u>Column A</u> (24) is greater than the quantity in <u>Column B</u> (22), so circle A is darkened.			

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PART ONE – WORD PROBLEMS

Directions: Choose the best answer from the four choices given.

1. If the average of three consecutive even numbers is 24, what is the smallest of the three numbers?

(A) 16
(B) 22
(C) 24
(D) 30

2. In the quadrilateral in Figure 3, $x =$

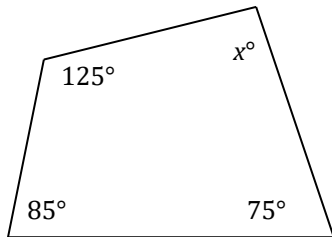


Figure 3

- (A) 255
(B) 105
(C) 85
(D) 75
3. If $a \diamond b = a - 3b$, what is the value of $2 \diamond 4$?
- (A) 10
(B) -2
(C) -4
(D) -10

4. A small town has two rectangular parks. The first park is 80 feet wide and 90 feet long, and the second park is 150 feet long and 200 feet wide. What is the average area of the two parks in square feet?

(A) 260
(B) 15,000
(C) 18,600
(D) 40,000

5. At a bike store, the number of bicycles in stock is equal to the number of tricycles in stock. If the total number of bicycle and tricycle wheels is 55, how many tricycles are there?

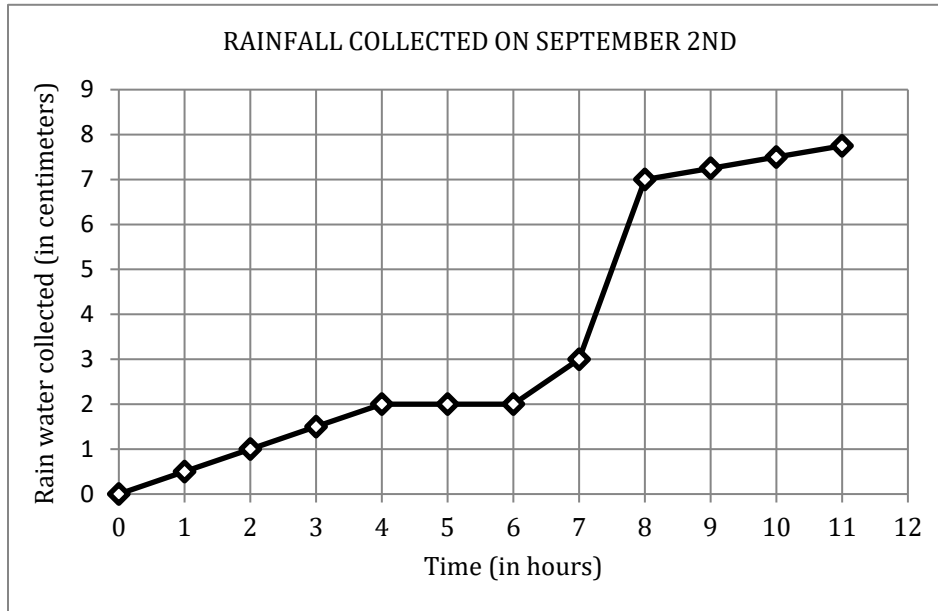
(A) 9
(B) 10
(C) 11
(D) 22

6. If the perimeter of a square is increased by 20%, what is the percent increase in the area of the square?

(A) 20%
(B) 44%
(C) 56%
(D) 80%

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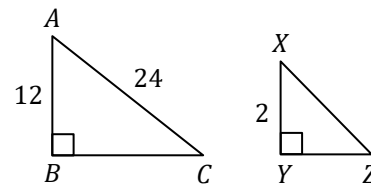
7. Natalia set up a rain gauge in her backyard to measure the amount of rainfall over a very rainy afternoon. She checked the gauge once every hour and recorded the amount of rain present inside the tube, measured in centimeters. The graph below shows the amount of rainfall collected in the tube as a function of time.



Over which time period did it rain the most?

- (A) Between hours 0 – 4.
 (B) Between hours 4 – 6.
 (C) Between hours 6 – 7.
 (D) Between hours 7 – 8.
-
8. If $y = \frac{x}{2} - 1$, for $4 < x + 4 < 8$, which of the following is NOT a possible value for y ?
- (A) 0
 (B) 0.5
 (C) 1
 (D) 2

9. Triangle ABC is similar to triangle XYZ .
Note: figures not drawn to scale.



What is the value of angle XZY ?

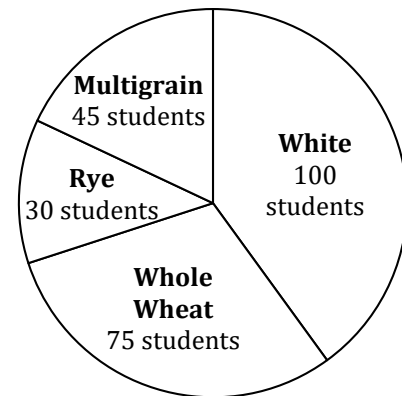
- (A) 20°
 (B) $\sin(1/2)$
 (C) $\tan(2/12)$
 (D) $\sin(2)$

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10. If $x\Delta y = (x^2 - y^2)$, then $x\Delta 3 =$
- (A) $(x + 3)(x - 3)$
 (B) $(x - 3)(x - 3)$
 (C) $x^2 - 3x$
 (D) $9 - y^2$
11. A cubic box has a side length of 2 cm. How many of these boxes could fit inside a larger cubic box whose base has a perimeter of 24 cm?
- (A) 12
 (B) 23
 (C) 27
 (D) 36
12. If $x + y$ is divisible by 9, which of the following expressions MUST also be divisible by 9?
- (A) $2x + 2y$
 (B) $\frac{x}{y} + 9$
 (C) $(9x) + y$
 (D) $xy + 9$
13. Every person who has a certain genetic mutation x has a 30% likelihood of developing a particular disease. If two people with the genetic mutation x are randomly chosen out of the population, what is the probability that both will develop the disease?
- (A) 6%
 (B) 9%
 (C) 30%
 (D) 60%

14. James has x dimes, 3 quarters, and y ten dollar bills. Which of the following expressions represents the total amount of money he has, in dollars?
- (A) $\frac{x}{10} + 0.75 + 10y$
 (B) $x + y + 3(0.25)$
 (C) $\frac{10}{x} + 75 + 10y$
 (D) $10x + 0.75 + 10y$
15. Based on the pie chart showing students' cafeteria bread preferences, what percent of the students prefer whole wheat

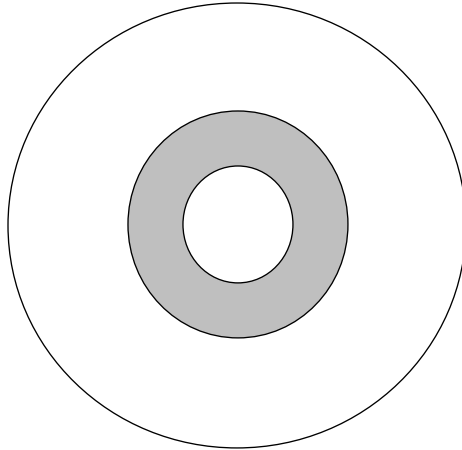
CAFETERIA BREAD PREFERENCES



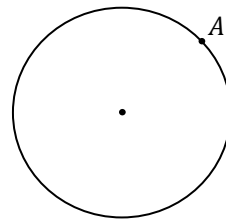
- (A) 75%
 (B) 40%
 (C) 30%
 (D) 25%

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16. The circular target in the figure below is made up of three concentric circles. The entire target has a diameter of 16 inches, and the radius of each concentric circle is half as large as the next largest circle. If Sacha throws a dart at random and it hits the target, what is the chance that it lands in the shaded region?



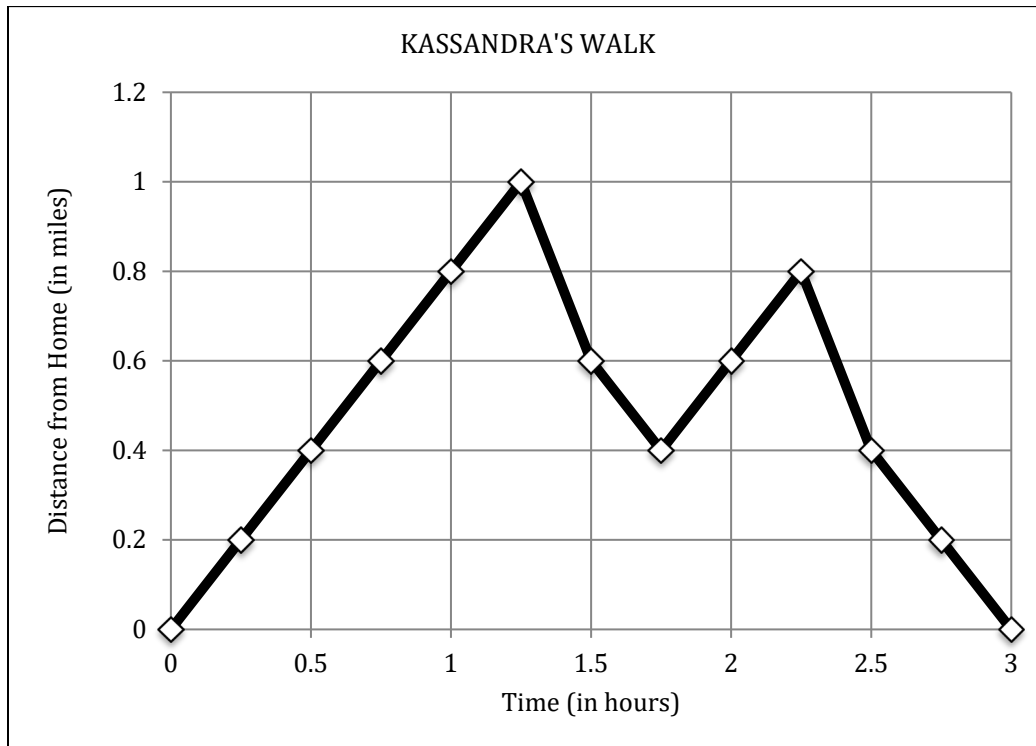
- (A) $\frac{1}{3}$
 (B) $\frac{2}{9}$
 (C) $\frac{3}{16}$
 (D) $\frac{1}{64}$
-
17. If $a - \frac{b}{2} = 8$, then which expression is equal to b ?
- (A) $2a - 16$
 (B) $2(a - 2)$
 (C) $\frac{a}{2} + 8$
 (D) $8 + \frac{b}{2}$
18. Sonja has five coins, each with a “heads” side and a “tails” side. If she flips all five coins at once, what is the chance that all of the coins will land with the “heads” side facing up?
- (A) $\frac{1}{2}$
 (B) $\frac{1}{4}$
 (C) $\frac{1}{25}$
 (D) $\frac{1}{32}$
19. The figure below shows a small carousel rotating around its center. Lucy is seated on the edge of the carousel at point A , and travels at a rate of 4π feet per minute as the carousel spins. It takes Lucy 5 minutes to travel all the way around the carousel. What is the radius of the carousel, in feet?



- (A) 5
 (B) 10
 (C) 15
 (D) 20

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20. The graph below shows Cassandra's distance from home as a function of time during a walk.



How many miles did Cassandra walk in total?

- (A) 1
- (B) 1.8
- (C) 2.8
- (D) 3

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PART TWO – QUANTITATIVE COMPARISONS

Directions: Using the information given in each question, compare the quantity in column A to the quantity in Column B. All questions in Part Two have these answer choices:

- (A) The quantity in Column A is greater.
 (B) The quantity in Column B is greater.
 (C) The two quantities are equal.
 (D) The relationship cannot be determined from the information given.

	<u>Column A</u>	<u>Column B</u>
21.	$5(x + 1) + 3(x - 2)$	$2(4x - 1)$

The sum of three consecutive even integers is 60.

	<u>Column A</u>	<u>Column B</u>
22.	The greatest of the three integers	20

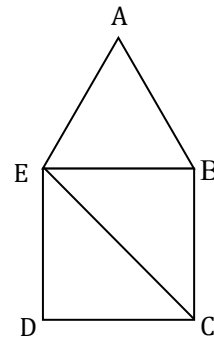
	<u>Column A</u>	<u>Column B</u>
23.	x	$\sqrt{x^2}$

	<u>Column A</u>	<u>Column B</u>
24.	The area of a circle in units squared	The circumference of the same circle in units

	<u>Column A</u>	<u>Column B</u>
25.	$1 + (6 + 2) \times 8$	72

	<u>Column A</u>	<u>Column B</u>
26.	5^0	$\left(-\frac{1}{2}\right)^2$

	<u>Column A</u>	<u>Column B</u>
27.	$a^2 - b^2$	$(a - b)^2$



Triangle ABE is equilateral. It shares side BE with square $BCDE$.

	<u>Column A</u>	<u>Column B</u>
28.	The area of triangle ABE	The area of triangle EBC

$$f(x) = 4x^2 + 9$$

	<u>Column A</u>	<u>Column B</u>
29.	$f(-5)$	$f(5)$

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Harriet is holding candies in her hand: 40% of the candies in her hand are red, 20% of the candies are green, 30% of the candies are yellow, and 10% of the candies are purple. Harriet accidentally drops two candies, one after the other.

- | | <u>Column A</u> | <u>Column B</u> |
|-----|--|--|
| 30. | The probability that she drops a green candy and then a red candy. | The probability that she drops a red candy and then a green candy. |

The stem-and-leaf-plot below shows the scores students received on an English test.

Stem	Leaf
5	9
6	1 5 7 9
7	0 2 3 3 3 5 7
8	2 3 5 6 8
9	1 3 3 7

- | | <u>Column A</u> | <u>Column B</u> |
|-----|------------------------------|---------------------------------|
| 31. | The median score on the test | The range of scores on the test |

The original price of a lamp is \$50.

- | | <u>Column A</u> | <u>Column B</u> |
|-----|---|-----------------|
| 32. | The price of the lamp after a 10% discount is taken off and then a 10% tax is added | \$50 |

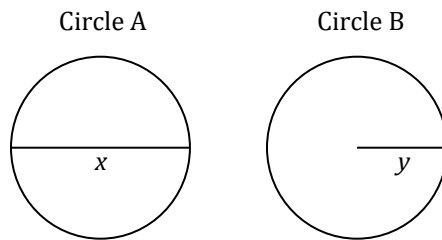
The area of a rectangle is 100cm^2 .

- | | <u>Column A</u> | <u>Column B</u> |
|-----|--------------------------------|-----------------|
| 33. | The perimeter of the rectangle | 30 cm |

- | | <u>Column A</u> | <u>Column B</u> |
|-----|--|--|
| 34. | The slope of the line with equation $y = 6x - 3$ | The slope of a line perpendicular to that line |

Christine runs twice as fast as Lucy. Combined, the two of them ran a total of 15 miles.

- | | <u>Column A</u> | <u>Column B</u> |
|-----|------------------------------|-----------------|
| 35. | The number of miles Lucy ran | 10 |



Note: Figures not drawn to scale.

The area of Circle A is $9\pi\text{ cm}^2$. The circumference of Circle B is $10\pi\text{ cm}$.

- | | <u>Column A</u> | <u>Column B</u> |
|-----|-----------------|-----------------|
| 36. | x | y |

- | | <u>Column A</u> | <u>Column B</u> |
|-----|--|---|
| 37. | The slope of the line connecting the points $(0, 7)$ and $(-3, 5)$ | The slope of the line connecting the points $(2, 8)$ and $(8, 2)$ |

STOP. Do not go on until told to do so.



Section 3

Reading Comprehension

36 Questions

Time: 35 minutes

This section contains six short reading passages. Each passage is followed by six questions based on its content. Answer the questions following each passage on the basis of what is stated or implied in that passage. You may write in your test booklet.

STOP. Do not go on
until told to do so.



Questions 1–6

1 Many people have asked me what, all
2 things considered, is the most valuable quality
3 a wilderness traveler can possess. I have
4 always replied unhesitatingly; for, no matter
5 how useful or desirable attributes such as
6 patience, courage, strength, endurance, good
7 nature, and ingenuity may prove to be,
8 undoubtedly a person with them, but without a
9 sense of direction, is practically helpless in the
10 wilds. Therefore, I should name a sense of
11 direction as the prime requisite for those who
12 would become true foresters, those who would
13 depend on themselves rather than on guides.
14 The faculty is largely developed, of course, by
15 practice, but it must be inborn. Some people
16 possess it; others do not—just as some people

17 are naturally musical while others have no ear
18 for music at all. It is a sort of extra, having
19 nothing to do with criteria of intelligence or
20 mental development: like the repeater
21 movement in a watch. A highly educated or
22 cultured person may lack it, while the roughest
23 may possess it. Some who have never been in
24 the woods or mountains acquire a fair facility
25 at picking a way in the space of a vacation, but I
26 have met a few who have spent their lives on
27 the prospect trail, and who are still, and always
28 will be, as helpless as the newest city dweller. It
29 is a gift, a talent. If you have its germ, you can
30 become a traveler of the wide and lonely
31 places. If not, you may as well resign yourself to
32 guides.

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1. The primary purpose of the passage is to
 - (A) describe traveling in the wild
 - (B) compare those who travel with guides to those who travel without
 - (C) discuss the importance of a sense of direction for travelers
 - (D) provide a history of wildlife exploration

2. Lines 3-10 (“I...wilds”) imply that the author believes all the following EXCEPT
 - (A) talented foresters have many good qualities.
 - (B) the most successful foresters have a honed sense of direction.
 - (C) patience is a helpful quality for a forester to have.
 - (D) all people are helpless in the wild.

3. As used in line 24, the word “facility” most nearly means
 - (A) disposition
 - (B) practice
 - (C) artifice
 - (D) aptitude

4. It can be inferred from the passage that a person who doesn’t need a guide in the wilderness
 - (A) must be courageous and patient.
 - (B) must be from the city.
 - (C) probably has a good sense of direction.
 - (D) has a good chance of getting lost.

5. According to the passage, having a sense of direction is
 - (A) impossible without a good understanding of music.
 - (B) entirely innate, and does not improve with practice.
 - (C) similar to having a natural talent for music.
 - (D) not as important as many other traits.

6. Which of the following best describes the tone of the article?
 - (A) mournful
 - (B) disinterested
 - (C) assertive
 - (D) ecstatic

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Questions 7–12

1 Many of the things that we think of as
2 vegetables are, in strict botanical terms,
3 actually fruits. Most of us know that the
4 tomato, for example, is a botanical fruit—and
5 when we commit the grave error of referring to
6 a tomato as a vegetable there is often some
7 wise soul nearby willing to correct us. The
8 pumpkin is also a botanical fruit. The same
9 goes for cucumbers, squash, avocados, and
10 even corn— because, in botanical terms, a fruit
11 is defined as “any edible part of a plant derived
12 from its ovary.”

13 An admirably precise definition, as one
14 might well expect from the scientific
15 community! And yet for some reason this
16 abundantly clear distinction has done little to
17 change which plants members of the general
18 public tend to refer to as fruits and which ones
19 they tend to refer to as vegetables. The

20 scientific definition of these terms thus
21 remains at odds with the popular
22 understanding.

23 But it is not only the general public who
24 have defied scientific authority: a body no less
25 august than the U.S. Supreme Court once had to
26 rule on whether the tomato could be legally
27 defined as a vegetable, and it too bucked the
28 scientific definition. In a case in which the
29 Supreme Court had to rule on whether
30 tomatoes should be taxed as fruits or as
31 vegetables, the Court devised its own rules for
32 how such matters should be decided. According
33 to the Supreme Court, a vegetable is any part of
34 a plant that is generally served with the main
35 part of the meal, whereas a fruit is a plant that
36 would generally be eaten with or as a dessert—
37 although, as far as I know, they took no
38 position on appetizers.

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7. The passage focuses mainly on
- (A) a comparison of fruits, vegetables, and nuts.
 - (B) whether tomatoes should be eaten as a dessert or as a main course.
 - (C) describing various kinds of fruits that people assume are vegetables.
 - (D) discussing the different definitions of common terms.
8. The word “august” (line 24) most nearly means
- (A) distinguished
 - (B) rebellious
 - (C) hidden
 - (D) agreeable
9. All of the following can be answered by the passage EXCEPT:
- (A) Is an avocado a botanical fruit or vegetable?
 - (B) Do people often correct each other about whether or not certain “vegetables” are really fruits?
 - (C) According to the U.S. Supreme Court, is a tomato legally a fruit or a vegetable?
 - (D) How did the scientific community react to the U.S. Supreme Court’s ruling regarding the definition of fruits and vegetables?
10. According to the passage, the scientific definition of a botanical fruit
- (A) is basically the same as the definition of a vegetable.
 - (B) is well respected by the U.S. Supreme Court.
 - (C) does not have much of an impact on how people use the word “fruit.”
 - (D) applies only to a small number of fruits, such as the pumpkin.
11. When the author says that it is a “grave error” to call a tomato a vegetable (line 5), his tone could best be described as
- (A) respectful
 - (B) aloof
 - (C) sarcastic
 - (D) puzzled
12. According to the passage, when the Supreme Court needed to determine whether a tomato was a fruit or a vegetable, the Court
- (A) came up with its own method for distinguishing between fruits and vegetables.
 - (B) used the botanical definition to determine how to classify a tomato.
 - (C) took a poll and relied on public opinion to make its decision.
 - (D) used the opposite of the botanical definition.

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Questions 13–18

1 How could life possibly have gotten
2 started on Earth? How could so many and such
3 a stunning number and variety of organisms
4 have come into existence? Few questions have
5 puzzled so many, for so long. Philosophers,
6 authors, and scientists have pondered,
7 discussed, and explored the issue for decades,
8 and numerous hypotheses have been proposed
9 over time: maybe the first organic molecules
10 were formed in the deep ocean, from chemicals
11 spewed out by volcanic vents. Maybe the
12 earliest life was actually made of simple
13 molecules, and these simple organisms created
14 the molecules used by complex living
15 organisms today. Maybe life came to Earth
16 from outer space. But in 1952, in a laboratory
17 in Chicago, one hypothesis was about to be put
18 to the test.

19 For decades, Alexander Oparin and J.B.S.
20 Haldane had proposed that conditions on the
21 early Earth favored chemical reactions that
22 could produce organic compounds—the
23 building blocks of life— from inorganic
24 precursors. At the University of Chicago,
25 Stanley Miller and Harold Urey had devised an
26 experiment to test the idea. The team filled a

27 network of glass flasks and tubes with water, to
28 simulate the early ocean, and with the same
29 gases believed to be present in the early
30 atmosphere. They applied heat, causing some
31 of the water to evaporate and begin to circulate
32 through the tubes as vapor. They then created
33 electrical sparks inside the apparatus to
34 simulate lightning. As the experiment
35 proceeded, the mixture began to change color.
36 After a few days, when the contents were
37 analyzed, the scientists found what they were
38 looking for: the very same organic compounds
39 that are the building blocks of all life on Earth.
40 While the Miller-Urey experiment did not
41 finally answer the question of life's origins, it
42 provided support for the hypothesis that
43 conditions on the early Earth could generate
44 the necessary components of life, and showed
45 that natural chemical processes could well
46 have been all that was required to strike the
47 spark of life. One of the most meaningful steps
48 in the quest for an answer to the question of
49 life, the Miller-Urey experiment, over the
50 course of a few days, revolutionized a
51 conversation which has been taking place for
52 thousands of years.

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13. This passage is primarily concerned with
- (A) discussing famous scientists and their careers in science.
 - (B) describing how to design and execute a scientific experiment.
 - (C) speculating about what sort of living things existed on the early earth.
 - (D) telling the story of a famous scientific experiment.
14. By the statement “Few questions have puzzled so many” (lines 4-5), the author probably means that
- (A) this question is unanswerable.
 - (B) many people have tried to find a solution to this question.
 - (C) experiments are needed to answer this question.
 - (D) the question seems much more complex than it really is.
15. The passage suggests that
- (A) Oparin and Haldane’s theory is the only explanation left for how life could have begun.
 - (B) although it was interesting, the Miller-Urey experiment was ultimately a failure.
 - (C) there’s no evidence one way or another for how life really began.
 - (D) we may need to learn more before we can finally determine how life began.
16. According to the passage, philosophers, authors, and scientists have all
- (A) conducted experiments to test theories of how life may have started.
 - (B) pondered the beginnings of life in their own ways.
 - (C) generally agreed on the best theories to explain life’s origins.
 - (D) successfully answered the question of life’s origins in different ways.
17. In line 24, “precursors” most nearly means
- (A) forerunners
 - (B) compounds
 - (C) descendants
 - (D) organisms
18. All of the following are true about Miller and Urey EXCEPT
- (A) their experiment was based on the ideas of Oparin and Haldane.
 - (B) they attempted to simulate the conditions of early earth.
 - (C) they used sparks to simulate lightning.
 - (D) they used some organic compounds to start the experiment.

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Questions 19–24

1 The mid-nineteenth century was a period
2 of great unrest and change in America. It was
3 the era of the Civil War, of the ratification of the
4 14th and 15th amendments, which granted
5 voting rights to all male citizens in America. It
6 was a time when abolitionists, slaves, and
7 politicians banded together to struggle for the
8 equality of all men. However, in looking back
9 on this era, many forget that a parallel fight
10 was raging through the American landscape:
11 the fight for the equality of women.

12 It was in 1848 that the first Women’s
13 Rights Convention was held in Seneca Falls,
14 New York. Elizabeth Cady Stanton, future
15 president of the National American Woman
16 Suffrage Association, proposed a “Declaration
17 of Sentiments” at this convention, which
18 included twelve resolutions. Eleven easily
19 passed; however, one declared that the right to
20 vote was “the first right of every citizen” and
21 that it ought not to be withheld from women.
22 Even among those assembled with the purpose
23 of advancing women’s rights and improving
24 their position in society, this was a radical

25 proposal. While the endorsement of equal
26 suffrage was hotly debated, ultimately the
27 “Declaration of Sentiments” was endorsed by
28 the convention in full.

29 This was a pivotal moment in the
30 struggle for women’s suffrage. Women’s Rights
31 conventions were held throughout the 1850s,
32 but in an effort to aid others during the Civil
33 War these conventions were stopped in the
34 mid-1860s. In 1867, after the war had ended,
35 Susan B. Anthony, another prominent advocate
36 for women’s rights, formed the Equal Rights
37 Association, and the long struggle continued.
38 Though they were rejected and turned aside by
39 politicians in many states, she and her fellow
40 suffragettes did not give up on the fight for
41 women’s suffrage. It was not until the 1920s,
42 the better part of a century after the
43 Declaration of Sentiments was endorsed by the
44 convention at Seneca Falls, that these women’s
45 efforts bore fruit. On August 26, 1920, the 19th
46 Amendment to the Constitution was ratified,
47 granting women the ability to finally exercise
48 their “first right” as American citizens.

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19. What is the primary focus of the passage?
- (A) America in the mid nineteenth century
 - (B) the growth of the women's suffrage movement
 - (C) the ratification of the 19th amendment
 - (D) Elizabeth Cady Stanton and Susan B Anthony's work as suffragettes
20. According to the passage, what was the role of the Civil War in the struggle for women's suffrage?
- (A) The Civil War dealt a blow to the Women's Rights movement from which it never fully recovered.
 - (B) Victory for abolitionists in the Civil War inspired the Women's Rights movement.
 - (C) The role that women played in the Civil War prompted the government to recognize their rights as citizens.
 - (D) The eruption of the Civil War temporarily interrupted the Women's Rights movement.
21. Which best expresses the author's view of the 19th amendment?
- (A) The 19th Amendment was little more than a symbolic victory for Women's Rights, but would ultimately prove to be worth the struggle.
 - (B) The 19th Amendment was probably a major cause of the Civil War, but still a necessary step in forming a strong democracy.
 - (C) The 19th amendment was a long-awaited recognition of basic rights, which was only possible after a long struggle.
 - (D) The 19th Amendment unfairly restricted the right to vote, and abolishing it was an important step towards a more equal democracy.
22. What does the author mean by a "parallel fight was raging through the American landscape" (lines 9-10)?
- (A) The suffragettes were traveling all over America to advocate for women's rights.
 - (B) Fights were common throughout the Americas at this time, and the suffragettes were only fighting about as much as everyone else.
 - (C) The Civil War mirrored the fight for women's suffrage.
 - (D) The struggles of the suffragettes and of African-American men were similar in their goals of equality and full citizenship.

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23. The author implies that the birth of the women's suffrage movement
- (A) occurred at the first Women's Right Convention.
 - (B) only took place due to Elizabeth Cady Stanton's efforts.
 - (C) did not begin until the 1900s.
 - (D) had been ongoing even before 1848.
24. The author's attitude towards the suffragettes could best be described as one of
- (A) scorn
 - (B) liberation
 - (C) admiration
 - (D) intrigue

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Questions 25–30

1 In the late Stone Age, the median life
2 expectancy of humans was only around 33
3 years; today, the median for people in wealthy
4 nations is around 80 years, and the global
5 average is around 67 years. From these
6 figures, some people conclude that in the Stone
7 Age most people died around 33 and today
8 most people die around 67. However, that is
9 not what these figures mean. The median age
10 of death is the age by which half of people have
11 died: it doesn't matter how long after 33 the
12 older half survives, or how long before 33 the
13 younger half died.

14 In fact, for a child born in the Stone Age,
15 the most dangerous part of his life would have
16 been his very early childhood, between birth
17 and five years of age. If he was able to survive
18 as long as the median, then there was a very
19 good chance that he would live into his fifties,
20 or even his sixties or seventies. Ironically,
21 although his life expectancy was 33, his thirties
22 would have been nearly the safest time in his
23 life!

24 Modern life expectancy is more than
25 twice as long as life expectancy in the Stone
26 Age. But that does not necessarily mean that
27 an individual today is likely to live exactly
28 twice as long as an individual from the Stone
29 Age. The main reason that modern humans
30 have a higher life expectancy is that almost all
31 of us survive into adulthood. If we only
32 compare modern people with Stone Age people
33 who actually survived to adulthood, there are
34 still improvements in our expected lifespan,
35 but they are more modest.

36 Some imagine that this detail of life
37 expectancies reveals something unfortunate:
38 that childhood deaths have been reduced, but
39 adults can't really expect to live twice as long.
40 However, in my view this detail makes the
41 numbers seem better, not worse. I will gladly
42 take a world in which children are safe over a
43 world in which I get 20 or 30 more years of old
44 age.

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25. This passage is primarily concerned with
- (A) criticizing people who want to live into their hundreds.
 - (B) persuading people that the way humans lived in the Stone Age was healthier than the way they live now.
 - (C) describing two different methods of averaging numbers.
 - (D) explaining why median life expectancy is so much higher today than in the past.
26. According to the passage, the median life expectancy is
- (A) the age that half of all people will live to, or will live beyond.
 - (B) the maximum age to which a person can expect to live.
 - (C) about how long a child can expect to survive.
 - (D) the age at which people are most likely to die.
27. Information from the passage supports which of the following statements?
- (A) It is now possible to accurately predict how long an individual will live.
 - (B) The global average lifespan will probably double again in coming years.
 - (C) Only a very small percentage of people from the Stone Age are still alive.
 - (D) Modern life expectancy is shorter in countries that are not very wealthy.
28. Based on information in the passage, we can conclude that people who reach adulthood today
- (A) will probably live somewhat longer than people who reached adulthood in the Stone Age.
 - (B) shouldn't expect to live quite as long as people did in the past.
 - (C) will not live as long on average as their parents.
 - (D) will live twice as long as people who reached adulthood in the Stone Age.
29. Based on information in the passage, we can conclude that a Stone Age man in his thirties would most likely
- (A) continue to live for many more years.
 - (B) die before reaching adulthood.
 - (C) live twice as long as a person born in modern times.
 - (D) live only for one or two more years.
30. With which of the following statements would the author most likely agree?
- (A) It would have been much more exciting to live in the Stone Age than today.
 - (B) We're all much better off in the modern world, where children can safely grow up.
 - (C) Adults today are not really any better off than they were in the Stone Age.
 - (D) The world would be a better place if fewer people lived into their hundreds.

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Questions 31–36

In the passage below, businessman and philanthropist Andrew Carnegie describes an interaction with business partners, which would influence their future relationship.

1 The sale of the bonds had not gone very
2 far when the panic of 1873 was upon us. One of
3 the sources of revenue which I then had was
4 Mr. Pierpont Morgan. He said to me one day:

5 "My father has cabled to ask whether you
6 wish to sell out your interest in that idea you
7 gave him."

8 I said: "Yes, I do. In these days I will sell
9 anything for money."

10 "Well," he said, "what would you take?"

11 I said I believed that a statement recently
12 rendered to me showed that there were
13 already fifty thousand dollars to my credit, and
14 I would take sixty thousand. Next morning
15 when I called Mr. Morgan handed me checks
16 for seventy thousand dollars.

17 "Mr. Carnegie," he said, "you were
18 mistaken. You sold out for ten thousand dollars
19 less than the statement showed to your credit.
20 It now shows not fifty but sixty thousand to

21 your credit, and the additional ten makes
22 seventy."

23 The payments were in two checks, one
24 for sixty thousand dollars and the other for the
25 additional ten thousand. I handed him back the
26 ten-thousand-dollar check, saying:

27 "Well, that is something worthy of you.
28 Will you please accept these ten thousand with
29 my best wishes?"

30 "No, thank you," he said, "I cannot do
31 that."

32 Such acts, showing a nice sense of
33 honorable understanding as against mere legal
34 rights, are not so uncommon in business as the
35 uninitiated might believe. And, after that, it is
36 not to be wondered at if I determined that so
37 far as lay in my power neither Morgan, father
38 or son, nor their house, should suffer through
39 me. They had in me henceforth a firm friend.

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31. The main purpose of the passage is to
- (A) describe the business of investing to the uninitiated.
 - (B) relate a story about the integrity of a business partner.
 - (C) tell a story about a bad investment decision.
 - (D) show how the narrator became a successful businessman.
32. The passage suggests that a person who is not involved in business
- (A) would have a very hard time making money on the stock market.
 - (B) should always be sure to check the value of his assets before making a deal.
 - (C) might be surprised to learn about the honorableness of some businessmen.
 - (D) could easily be taken advantage of by a dishonest businessman.
33. Which best explains why Mr. Carnegie said to Mr. Pierpont Morgan "In these days I will sell anything for money" (lines 8-9)?
- (A) Mr. Morgan had always dealt honorably with Mr. Carnegie in the past, so he knew that he would get a good deal.
 - (B) Mr. Carnegie was eager to make whatever money he could during the financial panic.
 - (C) Mr. Carnegie was very new to business at that time, and eager to make any deal that he could.
 - (D) Mr. Pierpont Morgan was Mr. Carnegie's main source of revenue, so he wanted to keep him happy.
34. Why did Mr. Morgan give Mr. Carnegie an extra check for ten thousand dollars?
- (A) Mr. Carnegie had clearly forgotten what his property was worth, and Mr. Morgan didn't want to take advantage of his mistake.
 - (B) Mr. Morgan thought that Mr. Carnegie could get a much better price if he bargained, so he overpaid to avoid haggling.
 - (C) Mr. Pierpont Morgan had accidentally given bad information to his father about how much Mr. Carnegie was asking for, but by the time the mistake was discovered it was too late to correct it.
 - (D) Mr. Morgan knew that if he overpaid on their first deal, it would impress Mr. Carnegie and he would be sure to get better deals in the future.
35. What does the passage suggest about Mr. Carnegie's legal rights?
- (A) Mr. Carnegie was entitled not only to the amount originally agreed upon, but also to the extra ten thousand dollars.
 - (B) Mr. Carnegie's legal rights weren't Mr. Morgan's only consideration when he decided to pay an extra ten thousand dollars.
 - (C) He could legally have sued Mr. Morgan for much more than just the ten thousand dollars, but that would have been viewed as dishonorable.
 - (D) His legal rights were more important to him than his honor, and so he gave up the profits to which he wasn't entitled.

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36. We can conclude from the information in the article that, in their later business dealings, the narrator probably
- (A) dealt with the Morgans on good terms, and kept their interests in mind.
 - (B) continued to undercharge the Morgans as a gesture of friendship.
 - (C) tried to be more careful when calculating what he was owed, to avoid losing another large sum of money.
 - (D) took advantage of the Morgans' generosity by charging them more than things were worth.

STOP. Do not go on
until told to do so.



Section 4

Mathematics Achievement

47 Questions

Time: 40 minutes

Each question is followed by four suggested answers. Read each question and then decide which one of the four suggested answers is best.

Find the row of spaces on your answer document that has the same number as the question. In this row, mark the space having the same letter as the answer you have chosen. You may write in your test booklet.

SAMPLE QUESTION:

If $a = 3$, what is the value $a^2 + (3 \times 4) \div 6$?

- (A) 3.5
- (B) 11
- (C) 14.5
- (D) 20

Sample Answer

(A) (B) (C) (D)

The correct answer is 11, so circle B is darkened.

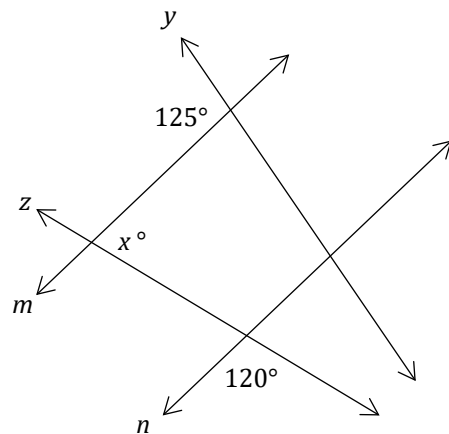
STOP. Do not go on
until told to do so.



- Which value is NOT equal to $4\sqrt{4}$?
 - $\sqrt{64}$
 - 8
 - $4^{\frac{3}{2}}$
 - 4^{-4}
- What is the value of the numerical expression $(1.5 \times 10^3) \times (2.0 \times 10^6)$?
 - 0.5×10^3
 - 3.5×10^6
 - 3.0×10^9
 - 3.4×10^{18}
- Augustus owns an analog clock. It takes twelve hours for the clock's hour hand to make one complete revolution around the clock's face. When Augustus first looked at the clock, it was 5:00pm. The next time he looked at the clock, it was 6:30pm. How many degrees did the clock's hour hand travel during this time?
 - 30°
 - 45°
 - 60°
 - 90°
- Jessica and Elise are both making posters for their school's club fair. Jessica can make a 12" by 12" poster in 30 minutes, and Elise can make an 18" by 12" poster in 45 minutes. Which girl would be able to make a 30" by 30" poster in the least amount of time?
 - Jessica
 - Elise
 - It would take them the same amount of time.
 - The answer cannot be determined from the information given.

- For what value(s) of x does $\frac{x^2-36}{x^0-4} = 0$?
 - $x = 6$ only
 - $x = -6$ and $x = 6$
 - $x = 4$
 - $x = 4, x = -6,$ and $x = 6$

- Parallel lines m and n are intersected by lines z and y .



Note: Figure is not to scale.

What is the value of x ?

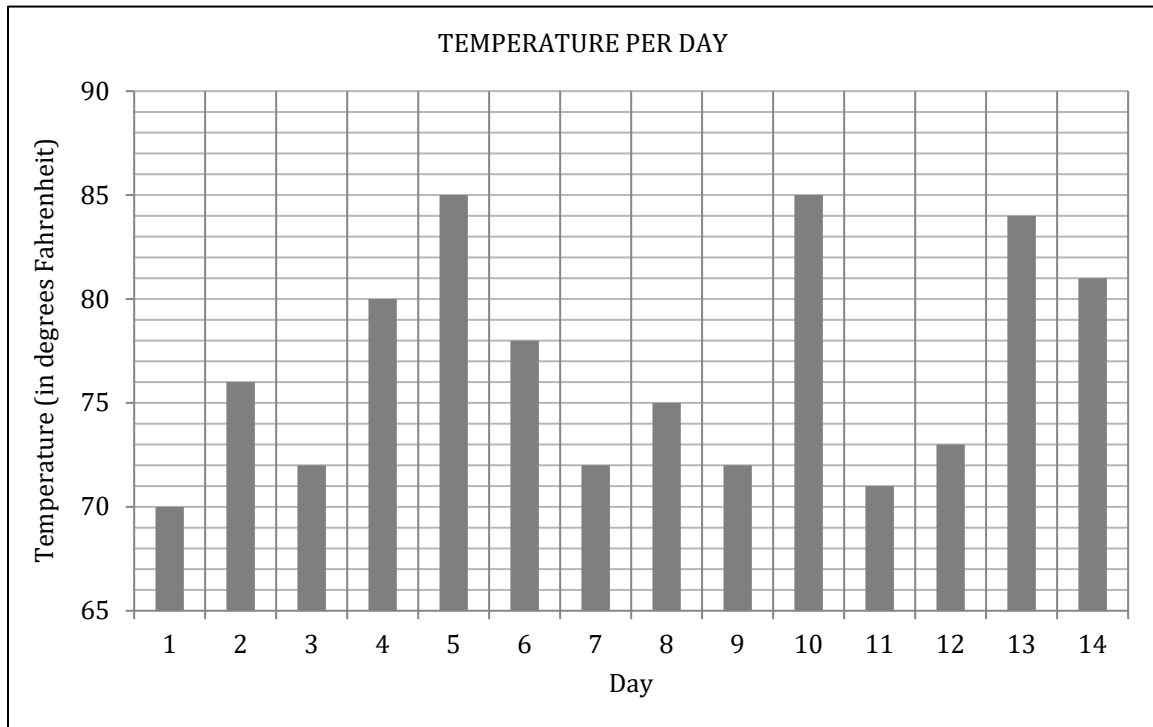
- 55
 - 60
 - 75
 - 90
- Point $(0, 4)$ lies on a circle whose center is $(4, 1)$. What is the area of the circle in square grid units?
 - 4π
 - 10π
 - 25π
 - 30π

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8. What is the value of the numerical expression $\sqrt{4 + 16}$?
- (A) $2\sqrt{5}$
(B) 4
(C) 6
(D) $10\sqrt{2}$
9. What is the result of the expression $\begin{bmatrix} 0 & 1 \\ 3 & 1 \end{bmatrix} + \begin{bmatrix} 1 & 4 & 6 \\ 5 & 2 & 1 \end{bmatrix}$?
- (A) $\begin{bmatrix} 1 & 5 \\ 8 & 3 \end{bmatrix}$
(B) $\begin{bmatrix} 0 & 4 \\ 15 & 2 \end{bmatrix}$
(C) $\begin{bmatrix} 1 & 5 & 7 \\ 8 & 3 & 2 \end{bmatrix}$
(D) This operation is not possible.
10. The formula for the volume of a cone is $\frac{1}{3}\pi r^2 h$. A cone has a height of 8 cm and a volume of 24π cm³. What is the surface area of its base?
- (A) 4π cm²
(B) 9π cm²
(C) 12π cm²
(D) 36π cm²
11. Serena is making a graph of the heights and weights of all the students in her class. What is the most reasonable unit she should use to represent the students' weights?
- (A) milligrams
(B) meters
(C) cubic centimeters
(D) kilograms
12. Let $i^0 = x$. The value of x is a(n):
- (A) irrational number
(B) complex number
(C) whole number
(D) imaginary number
13. Pete has a drawer that contains 5 pairs of yellow socks, 6 pairs of black socks, 2 pairs of striped socks, and 7 pairs of white socks. Pete randomly selects one sock from the drawer and puts it on. Then, he randomly selects another. What is the chance that both socks are white?
- (A) $\frac{7}{20} \times \frac{13}{39}$
(B) $\frac{7}{40} \times \frac{7}{40}$
(C) $\frac{7}{20} + \frac{7}{20}$
(D) $\frac{7}{30} \times \frac{13}{39}$

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14. The bar graph below represents the temperature recorded on fourteen consecutive days.



What is the mode of the data?

- (A) 70°
 (B) 72°
 (C) 80°
 (D) 85°

15. The first six terms of an arithmetic sequence are shown below.

$$24, 17, 10, 3, -4, -11$$

Which expression represents the n th term in this sequence?

- (A) $n - 7$
 (B) $n + 7$
 (C) $-7n + 24$
 (D) $-7n + 31$

16. There are 5,280 feet in 1 mile and there are 3.28 feet in one meter. A cheetah can run up to 75 miles per hour. Which expression represents the cheetah's maximum speed in meters per second?

- (A) $\frac{75 \times 5,280}{3.28 \times 60 \times 60}$
 (B) $\frac{75 \times 5,280 \times 60}{3.28 \times 60}$
 (C) $\frac{75 \times 5,280 \times 3.28}{60 \times 60}$
 (D) $\frac{60 \times 60}{75 \times 5,280 \times 3.28}$

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17. A 40 foot tall building has a shadow that is 32 feet long. Lauren, who is 5 feet tall, is standing next to the building. What is the length of Lauren's shadow?

- (A) 2.5 feet
- (B) 3 feet
- (C) 4 feet
- (D) 4.2 feet

18. The grocery store raised the price of bread by \$0.90 a loaf, which was a 30% increase in price. What was the original price of a loaf of bread?

- (A) \$2.60
- (B) \$3.00
- (C) \$3.30
- (D) \$3.90

19. If $(2.85 + 7.15)\frac{m}{10} = 10$, then what is the value of m ?

- (A) 0
- (B) 1
- (C) 10
- (D) 20

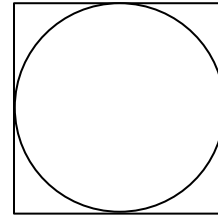
20. Which expression is equivalent to the expression $(2x^3y^4)(x^{-3}y^2) + 2y^6$?

- (A) $4y^6$
- (B) $4x^9y^8$
- (C) $2x^6y^6 + 2y^6$
- (D) $4x^0y^{12}$

21. The least common multiple of 2, 4, and p is 12. What is a possible value for p ?

- (A) 2
- (B) 4
- (C) 5
- (D) 6

22. A circle is inscribed in a square, as shown below.



The area of the circle is $9\pi \text{ cm}^2$. What is the area of the square?

- (A) 3 cm^2
- (B) 9 cm^2
- (C) 16 cm^2
- (D) 36 cm^2

23. Hannah asked 180 students about their favorite ice cream preferences and used the data to make the table shown below.

Flavor	Number of Students
chocolate	35
vanilla	60
strawberry	15
mint	25
cookie dough	45

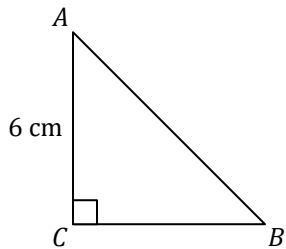
If Hannah were to make a circle graph using this data, what would be the central angle of the portion of the graph representing vanilla?

- (A) 30°
- (B) 60°
- (C) 120°
- (D) 180°

24.

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Triangle ABC is shown. The length of AC is 6 cm. The measure of angle CAB is 50° .



The value of which expression is equal to the length of side AB ?

- (A) $\frac{6}{\sin 40^\circ}$
- (B) $\frac{6}{\sin 90^\circ}$
- (C) $6 \tan 50^\circ$
- (D) $6 \sin 50^\circ$

25. A long distance phone call costs \$10.00 for the first ten minutes, and \$0.75 for each additional thirty seconds. Which of the following expressions, in dollars, represents the cost of a phone call lasting for 23 minutes?

- (A) $10.00 + 0.75(13)$
- (B) $10.00 + 1.5(13)$
- (C) $10.00 + 0.75 + 23$
- (D) $10.00 + \frac{23}{0.75}$

26. At a fundraiser, there are 27 volunteers that need to be divided into groups. If at least 5 but no more than 9 people can be in a group, and no two groups can have the same number of volunteers, what is the smallest number of groups required to accommodate all 27 volunteers?

- (A) 4
- (B) 5
- (C) 7
- (D) 8

27. The table below shows the result of a survey that asked 800 people if they liked country music or rock music.

Music Type	Number of People
Country	300
Rock	700

Based on this information, how many people liked both country and rock music?

- (A) 100
- (B) 200
- (C) 500
- (D) 1000

28. In Figure 1, the perimeter of the two congruent trapezoids is 48.

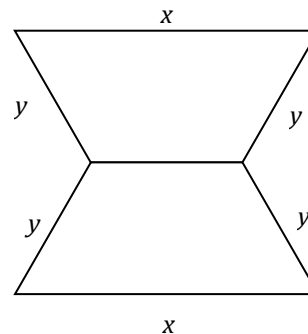


Figure 1

If $x = 12$ cm, then what is the length of y ?

- (A) 24
- (B) 12
- (C) 8
- (D) 6

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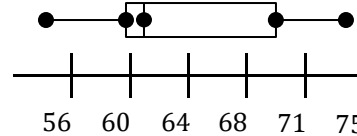
29. Sam needs to make a password that is four characters long. The first two characters must be alphabetical letters, and the second two characters must be numerical digits from zero through nine. None of the letters or numbers can be used more than once. How many different passwords are possible?

- (A) $26 \times 26 \times 10 \times 10$
- (B) $26 \times 25 \times 10 \times 9$
- (C) $\frac{26}{26} \times \frac{25}{26} \times \frac{10}{10} \times \frac{9}{10}$
- (D) $\frac{1}{26} \times \frac{1}{26} \times \frac{1}{10} \times \frac{1}{10}$

30. If $30 + m^{1/2} = 30$, then what is $30 \times m$?

- (A) 31
- (B) 30
- (C) 1
- (D) 0

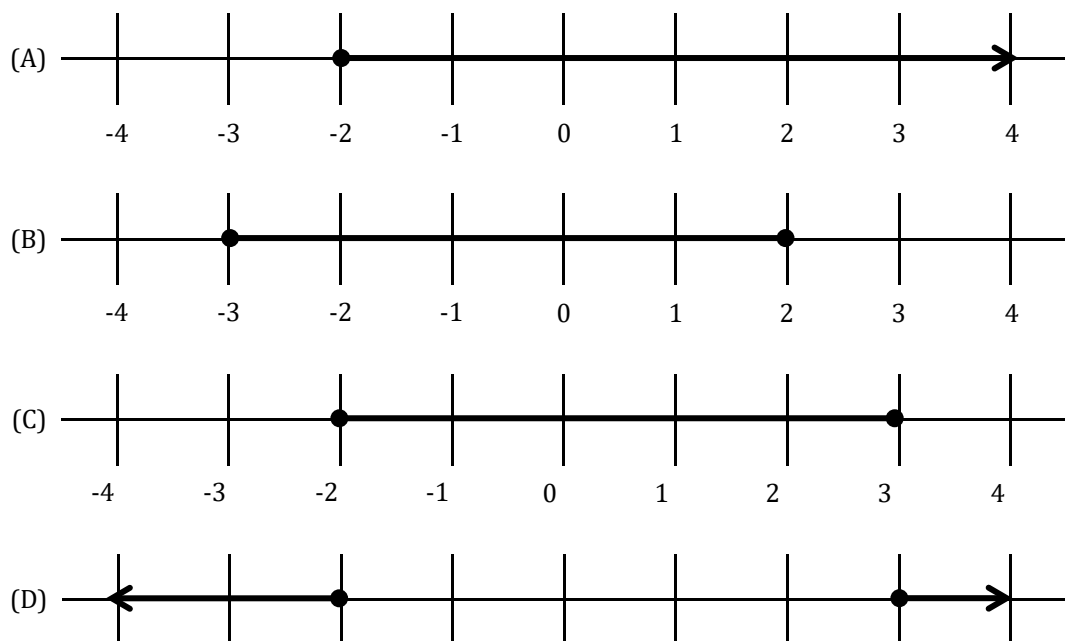
31. The box-and-whisker plot below represents the heights of thirty people in Jessica's family.



What is the median height of Jessica's family members?

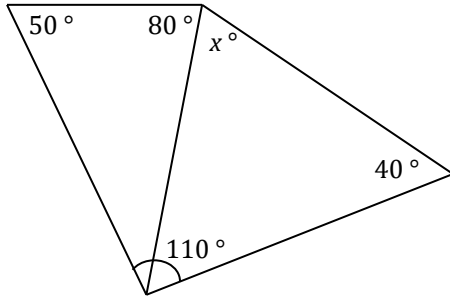
- (A) 56
- (B) 62
- (C) 65
- (D) 75

32. Which number line below represents the solution set of the inequality $|2x - 1| \leq 5$?



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33. In the figure below, two adjacent triangles form a quadrilateral. The measures of the angles of these triangles are shown below.



Note: figure is not to scale.

What is the value of x ?

- (A) 50
 - (B) 65
 - (C) 80
 - (D) 85
34. A and B have an average of 15. If A is greater than B , which of the following MUST be true?
- (A) $A - B = 15$
 - (B) $\frac{A}{B} \times 2 = 15$
 - (C) $A = 12$ and $B = 18$
 - (D) $(A + B) \div 2 = 15$

0

35. The table below shows the amount of sun exposure given to five different plants and each plant's growth over the day.

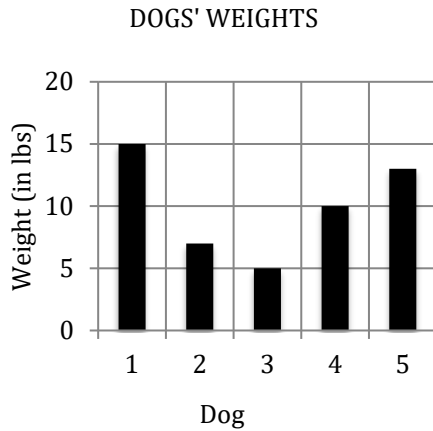
Amount of Sun Exposure (Hours)	Growth (Millimeters)
1	1.5
2	3
3	4.5
4	6
5	7.5

If you were to create a graph of this data with the amount of sun exposure on the x -axis and the amount of growth on the y -axis, what would the slope of the line be?

- (A) -1.5
- (B) 0
- (C) 1.5
- (D) 2.0

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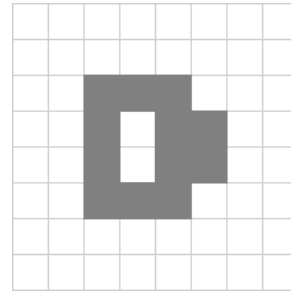
36. The bar graph below represents the weights, in pounds, of 5 different dogs.



If 5 more dogs with an average weight of 5 pounds are added, what will be the approximate average weight of all 10 dogs?

- (A) 5
 - (B) 7.5
 - (C) 10
 - (D) 55
37. In the first round of a spelling contest, each student had to spell 2 words. Miriam took an average of 10 seconds to spell each word. Jake and Rafael took an average of 15 seconds per word, and Sam took an average of 5 seconds per word. At the end of the first round, what was the total time for all 4 students?
- (A) 30 seconds
 - (B) 60 seconds
 - (C) 90 seconds
 - (D) 100 seconds

38. The area of each grid square shown is 10 cm².



What is the area of the shaded region?

- (A) 60 cm²
 - (B) 100 cm²
 - (C) 120 cm²
 - (D) 140 cm²
39. If $y(x + 2)(x - 2) = 2x^2 - 8$, which of the following could be the value of y ?
- (A) 0
 - (B) 1
 - (C) 2
 - (D) 4
40. Let $\sqrt{2x} = i$. What is the value of x ?
- (A) $2i$
 - (B) $\frac{i}{2}$
 - (C) $i^{1/2}$
 - (D) $-\frac{1}{2}$
41. If $f(x) = |-(x^2) - 3|$, then what is the value of $f(-1)$?
- (A) -4
 - (B) -3
 - (C) 3
 - (D) 4

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42. A line with points (0, 1) and (2, -3) is plotted on a graph. What is the slope of the line?

- (A) -3
- (B) -2
- (C) $-\frac{1}{2}$
- (D) 2

43. The ratio of mammals to reptiles at the zoo was 4:1. For every 20 mammals, how many reptiles were there?

- (A) 80
- (B) 20
- (C) 5
- (D) 4

44. The table below shows the probability that Melinda will pick each color button out of a bag.

Color	Probability
Blue	$\frac{3}{10}$
Red	$\frac{1}{5}$
Green	$\frac{3}{10}$
Purple	$\frac{1}{5}$

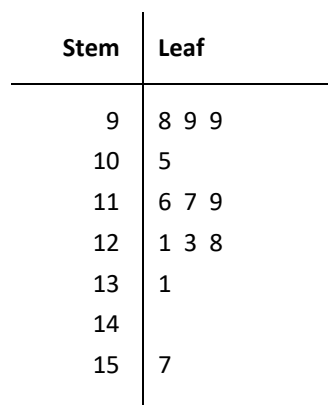
If she selects a button at random, which color(s) is she most likely to select?

- (A) Blue
- (B) Red
- (C) Blue or green
- (D) Red or purple

45. Which of the following expressions represents the complete factorization of $x^4 - 16$?

- (A) $(x - 4)(x + 4)$
- (B) $(x^2 - 4)(x^2 + 4)$
- (C) $4(x^1 - 4)$
- (D) $(x + 2)(x - 2)(x^2 + 4)$

46. The following stem-and-leaf-plot represents the weight of 12 people.



What is the range of the data?

- (A) 59
- (B) 98
- (C) 99
- (D) 157

47. What is the result of the expression $\begin{bmatrix} 1 & 4 \\ 7 & 2 \end{bmatrix} +$

$\begin{bmatrix} 2 & 3 \\ 0 & 1 \end{bmatrix}?$

- (A) $\begin{bmatrix} 3 & 7 \\ 7 & 3 \end{bmatrix}$
- (B) $\begin{bmatrix} 1 & 1 \\ 7 & 1 \end{bmatrix}$
- (C) $\begin{bmatrix} 2 & 12 \\ 0 & 2 \end{bmatrix}$
- (D) $\begin{bmatrix} 7 & 3 \\ 0 & 1 \end{bmatrix}$

STOP. Do not go on until told to do so.



ANSWER KEY

ISEE UPPER LEVEL TEST 1

ISEE UPPER LEVEL

TEST 1

SECTION 1 – VERBAL REASONING

1. D	6. B	11. B	16. C	21. A	26. B	31. D	36. B
2. D	7. C	12. A	17. A	22. D	27. A	32. D	37. A
3. B	8. A	13. A	18. D	23. C	28. D	33. C	38. C
4. D	9. B	14. D	19. D	24. A	29. B	34. D	39. C
5. A	10. B	15. D	20. C	25. B	30. B	35. A	40. B

SECTION 2 – QUANTITATIVE REASONING

1. B	6. B	11. C	16. C	21. A	26. A	31. A	36. A
2. D	7. D	12. A	17. A	22. A	27. D	32. B	37. A
3. D	8. D	13. B	18. D	23. D	28. B	33. A	
4. C	9. B	14. A	19. B	24. D	29. C	34. A	
5. C	10. A	15. C	20. C	25. B	30. C	35. B	

SECTION 3 – READING COMPREHENSION

1. C	6. C	11. C	16. B	21. C	26. A	31. B	36. A
2. D	7. D	12. A	17. A	22. D	27. D	32. C	
3. D	8. A	13. D	18. D	23. A	28. A	33. B	
4. C	9. D	14. B	19. B	24. C	29. A	34. A	
5. C	10. C	15. D	20. D	25. D	30. B	35. B	

SECTION 4 – MATHEMATICS ACHIEVEMENT

1. D	7. C	13. A	19. C	25. B	31. B	37. C	43. C
2. C	8. A	14. B	20. A	26. A	32. C	38. C	44. C
3. B	9. D	15. D	21. D	27. B	33. C	39. C	45. D
4. C	10. B	16. A	22. D	28. D	34. D	40. D	46. A
5. B	11. D	17. C	23. C	29. B	35. C	41. D	47. A
6. B	12. C	18. B	24. A	30. D	36. B	42. B	

SCORING YOUR TEST

On the ISEE, you receive one point for every question you answered correctly, and you receive no points for questions you answered incorrectly or skipped. In each section, the ISEE also includes 5 or 6 experimental questions that do not count towards your score. You won't be told which questions are unscored, and for this reason, these practice tests do not have specific questions marked as experimental. This also means that it isn't possible to determine an exact score for each section of these practice tests, but you can estimate your score using the procedures below.

To estimate your **raw score** for your practice test, first count up the number of questions you answered correctly in each section. Then, follow the table below to subtract 5 or 6 points for each section, accounting for the experimental questions that would not be scored on your actual ISEE exam.

MY RAW SCORE			
Section	# of Questions Correct		Raw Score
Verbal Reasoning		- 5 =	
Quantitative Reasoning		- 5 =	
Reading Comprehension		- 6 =	
Mathematics Achievement		- 5 =	

SCALED SCORE

Once you have found your raw score, convert it into an approximate **scaled score** using the scoring charts that follow. These charts provide an estimated range for your ISEE scaled score based on your performance on this practice test. Keep in mind that this estimate may differ slightly from your scaled

score when you take your actual ISEE exam, depending on the ISEE’s specific scaling for that exam and any differences in your own test-taking process.

UPPER LEVEL SCALED SCORE RANGES				
Raw Score	Verbal Reasoning	Quantitative Reasoning	Reading Comprehension	Mathematics Achievement
42				920 – 950
41				920 – 950
40				915 – 945
39				915 – 945
38				910 – 940
37				910 – 935
36				905 – 935
35	910 – 940			900 – 930
34	910 – 940			900 – 930
33	905 – 935			895 – 925
32	905 – 935	915 – 945		895 – 925
31	900 – 930	910 – 940		890 – 920
30	900 – 930	910 – 940	910 – 940	890 – 920
29	895 – 925	905 – 935	905 – 935	885 – 915
28	890 – 920	900 – 930	900 – 930	880 – 910
27	890 – 920	900 – 930	900 – 930	880 – 910
26	885 – 915	895 – 925	895 – 925	875 – 905
25	885 – 910	890 – 920	890 – 920	875 – 905
24	880 – 910	890 – 920	885 – 915	870 – 900
23	875 – 905	885 – 915	885 – 915	870 – 900

22	875 – 905	880 – 910	880 – 910	865 – 895
21	870 – 900	880 – 910	875 – 905	865 – 895
20	870 – 900	875 – 905	870 – 900	860 – 890
19	865 – 895	870 – 900	870 – 900	860 – 890
18	860 – 890	870 – 900	865 – 895	855 – 885
17	860 – 890	865 – 895	860 – 890	855 – 885
16	855 – 885	860 – 890	855 – 885	850 – 880
15	850 – 880	860 – 890	855 – 885	845 – 875
14	850 – 880	855 – 885	850 – 880	845 – 875
13	845 – 875	850 – 880	845 – 875	840 – 870
12	845 – 875	845 – 875	840 – 870	840 – 870
11	840 – 870	845 – 875	840 – 870	835 – 865
10	840 – 870	840 – 870	835 – 865	835 – 865
9	835 – 865	835 – 865	830 – 860	830 – 860
8	835 – 865	835 – 865	825 – 855	830 – 860
7	830 – 860	830 – 860	825 – 855	825 – 855
6	825 – 855	825 – 855	820 – 850	825 – 855
5	825 – 855	825 – 855	815 – 845	820 – 850
4	820 – 850	820 – 850	810 – 840	820 – 850
3	815 – 845	815 – 845	810 – 840	815 – 845
2	815 – 845	815 – 845	805 – 835	810 – 840
1	810 – 840	810 – 840	800 – 830	810 – 840
0	805 – 840	805 – 835	795 – 825	805 – 835

PERCENTILE

When you take your actual ISEE exam, you will receive a **percentile** ranking comparing your performance against the performance of other students in the same grade who have taken the ISEE that year. For example, a percentile of 62 means that you scored higher than 62% of other ISEE test-takers applying to the same grade. Because your percentile ranking shows how well you performed according to your own grade level, these rankings are frequently given high consideration by admissions offices.

The following charts provide an estimate of your ISEE percentile rankings for this practice test, compared against other students applying to the same grade. For example, if you are scoring at or above the 75th percentile, you are scoring higher than 75% of other ISEE test-takers applying to the same grade. Keep in mind that these percentiles are estimates only, and your actual ISEE percentile will depend on the specific group of students taking the exam in your year.

UPPER LEVEL VERBAL REASONING PERCENTILES			
Grade Applying To	75 th percentile	50 th percentile	25 th percentile
Grade 9	893	879	866
Grade 10	899	883	867
Grade 11	902	886	869
Grade 12	898	881	863

UPPER LEVEL QUANTITATIVE REASONING PERCENTILES			
Grade Applying To	75 th percentile	50 th percentile	25 th percentile
Grade 9	892	878	866
Grade 10	897	882	868
Grade 11	901	885	870
Grade 12	897	884	872

UPPER LEVEL READING COMPREHENSION PERCENTILES			
Grade Applying To	75 th percentile	50 th percentile	25 th percentile
Grade 9	897	880	865
Grade 10	902	886	868
Grade 11	903	889	868
Grade 12	899	880	862

UPPER LEVEL MATHEMATICS ACHIEVEMENT PERCENTILES			
Grade Applying To	75 th percentile	50 th percentile	25 th percentile
Grade 9	894	882	869
Grade 10	900	886	871
Grade 11	905	890	875
Grade 12	903	889	875

STANINE

When you receive the score report for your actual ISEE exam, your percentile score will also be broken down into a **stanine**. A stanine is a number from 1-9 obtained by dividing the entire range of students' scores into 9 segments, as shown in the table below:

PERCENTILE RANK	STANINE
1 – 3	1
4 – 10	2
11 – 22	3

23 – 39	4
40 – 59	5
60 – 76	6
77 – 88	7
89 – 95	8
96 – 99	9

Although it isn't possible to calculate your exact stanine from this practice test, you can estimate a stanine score range by looking at your estimated percentile score on each section. For example, if you scored between the 50th and 75th percentile in one of your test sections, your stanine score would be between 5 and 6.